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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,801	01/26/2004	John W. Juvinall	18261 USA	2497

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EXAMINER	
COHEN, AMY R	
ART UNIT	PAPER NUMBER
2859	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/765,801	JUVINALL ET AL.
	Examiner	Art Unit
	Amy R. Cohen	2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,18,20-22,25-30,33 and 35-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,18,20-22,25-30,33 and 35-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/28/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 33, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhatia et al. (U. S. Patent No. 5,499,718) in view of Kulig (U. S. Patent No. 4,580,045).

Claims 1, 2, 4, 5: Bhatia et al. discloses an apparatus (10) for inspecting lean of a container (24) having a container bottom, which includes: means for holding a container in position and rotating the container around an axis (Col 5, lines 16-46), a light source (70) positioned beneath the container in said means for directing light energy onto the bottom of the container (Fig. 3), a light sensor (72) positioned beneath the container to receive portions of the light energy from said source reflected from the container bottom (Fig. 3), and an information processor (88) coupled to said light sensor for determining, as a combined function of said reflected light energy and container rotation, characteristics of the acceptability of a container (Col 2, lines 28-55).

Bhatia et al. discloses the apparatus wherein said light energy is directed from said source onto a periphery of the container bottom (Col 10, lines 15-45).

Bhatia et al. discloses the apparatus wherein said information processor includes a preprocessor for scanning said light sensor at first increments of container rotation, and a main processor for receiving scan data from said preprocessor at second increments of container rotation greater than said first increments (Fig. 4 and Col 5, lines 47-67 and Col 6, lines 59-65).

Bhatia et al. discloses the apparatus wherein said means for holding the container in position and rotating the container around an axis includes spaced backup rollers (44) for externally engaging the container, and a drive roller (46) for engaging and rotating the container while holding the container against said backup rollers so as to define an average axis of rotation as a function of geometry of the container and spacing between said backup rollers (Figs. 1 and 3 and Col 6, lines 7-58).

Bhatia et al. does not disclose the apparatus wherein the information processor specifically determines the departure of the container bottom from a plane perpendicular to said axis; and said information processor determines departure of the periphery of the container bottom from said plane perpendicular to said axis.

Kulig discloses an apparatus wherein the information processor specifically determines the departure of the container bottom from a plane perpendicular to said axis (Col 3, lines 2-21); and said information processor determines departure of the container bottom from said plane perpendicular to said axis (Figs. 3-5 and Col 3, lines 2-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bhatia et al. to inspect a lean of a container, as taught by Kulig, since Bhatia et al. teaches an apparatus for inspection of physical properties of a container, that other properties may be inspected (Bhatia et al., Col 5, lines 11-26 and Col 13, lines 48-55), and since lean of a container is a physical property which is important in determining acceptability of a container.

Claims 33 and 36: Bhatia et al. discloses a method of inspecting a container bearing surface, comprising the steps of: (a) providing a light source generally facing the bearing surface, (b) providing a light sensor generally facing the bearing surface, (c) rotating the container about

an axis, (d) causing said light source to emit light which reflects off of a position on the bearing surface, (e) causing said light sensor to record the position at which the light reflected in said step (d) strikes said light sensor, and (f) analyzing from said position data recorded in said step (e) characteristics of the acceptability of a container (Col 2, lines 28-55).

Bhatia et al. discloses the method wherein step (e) includes compressing data from said recorded position data (Col 13, lines 16-38).

Bhatia et al. does not disclose the method comprising analyzing from said position data recorded in said step (e) departure of the bearing surface from a plane perpendicular to said axis.

Kulig discloses a method wherein the information processor specifically determines the departure of the bearing surface from a plane perpendicular to said axis (Col 3, lines 2-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Bhatia et al. to inspect a lean of a container, as taught by Kulig, since Bhatia et al. teaches a method for inspection of physical properties of a container, that other properties may be inspected (Bhatia et al., Col 5, lines 11-26 and Col 13, lines 48-55), and since lean of a container is a physical property which is important in determining acceptability of a container.

3. Claims 3, 18, 20-22, 25-28, 30, 35, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhatia et al. and Kulig as applied to claims 1, 2, 4, 5, 33, and 36 above, and further in view of Baldwin (U. S. Patent No. 5,510,610).

Bhatia et al. and Kulig disclose the apparatus and method as described above in paragraph 2 and wherein said information processor is adapted to utilize outputs to determine container lean (Kulig, Col 3, lines 2-21).

Bhatia et al. and Kulig do not disclose the apparatus and method wherein the container includes knurling around the periphery of the container bottom, said image processor is responsive to said reflected light energy to determine depth of said knurling; wherein the container bottom surface having a plurality of knurls, wherein the knurls cause said light sensor to receive non-continuous reflections from a knurl peak and a knurl valley; wherein said sensor output signal at least includes first outputs representing reflections from the knurl peak and second outputs representing reflections from the knurl valley; wherein said information processor is adapted to utilize both said first and second outputs to determine knurl depth; wherein said information processor is adapted to generate a sinusoidal expression relative of a height differential between two positions on the container bottom; wherein said information processor uses a least squares fitting technique to derive values for one or more variables of said sinusoidal expression; wherein said information processor uses an iterative search method for determining a sine cycle for said sinusoidal expression; wherein said information processor uses a selection process involving min/max data points to improve the efficiency of the least square fitting technique.

Baldwin discloses an apparatus and method wherein the container includes knurling around the periphery of the container bottom, said image processor is responsive to said reflected light energy to determine depth of said knurling (Col 2, lines 59-65 and Col 4, lines 40-64); wherein the container bottom surface having a plurality of knurls, wherein the knurls cause said light sensor to receive non-continuous reflections from a knurl peak and a knurl valley (Col 2, lines 59-65 and Col 4, lines 17-64); wherein said sensor output signal at least includes first outputs representing reflections from the knurl peak and second outputs representing reflections from the knurl valley (Col 2, lines 59-65 and Col 4, lines 17-64); wherein said information

processor is adapted to utilize both said first and second outputs to determine knurl depth (Col 2, lines 59-65 and Col 4, lines 17-64); wherein said information processor is adapted to generate a sinusoidal expression relative of a height differential between two positions on the container bottom (Figs. 12-14); wherein said information processor uses a least squares fitting technique to derive values for one or more variables of said sinusoidal expression (Col 4, lines 17-64, least squares fitting is an algorithm which uses min/max data points); wherein said information processor uses an iterative search method for determining a sine cycle for said sinusoidal expression (Col 4, lines 17-64); wherein said information processor uses a selection process involving min/max data points to improve the efficiency of the least square fitting technique (Col 4, lines 17-64, least squares fitting is an algorithm which uses min/max data points).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus and method of Bhatia et al. and Kulig to inspect knurling of a container bottom and use an algorithm to interpret the data, as taught by Baldwin, since Bhatia et al. and Kulig teach an apparatus and method for inspection of physical properties of a container, that other properties may be inspected and algorithms used to interpret data (Bhatia et al., Col 5, lines 11-26, Col 11, lines 48-51, and Col 13, lines 16-55 and Kulig, Col 3, lines 2-21), and since knurling of a container bottom is a physical property which is important in determining acceptability of a container.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhatia et al. and Kulig as applied to claims 1, 2, 4, 5, 33, and 36 above, and further in view of Ringlien (U. S. Patent No. 5,489,987).

Bhatia et al. and Kulig disclose the apparatus and method as described above in paragraph 2 and wherein the apparatus comprises multiple light sensors (Bhatia et al, Fig. 8 and Col 7, lines 20-35).

Bhatia et al. and Kulig do not disclose the apparatus comprising two of said light sources and two of said light sensors positioned in pairs on diametrically opposed sides of said axis, said information processor being responsive to a comparison of outputs of said light sensors to indicate lean of a container.

Ringlien discloses an the apparatus comprising two of said light sources and two of said light sensors positioned in pairs on diametrically opposed sides of said axis, said information processor being responsive to a comparison of outputs of said light sensors to indicate lean of a container (Col 1, line 60-Col 2, line 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bhatia et al. and Kulig, to have two light sources and two light sensors positioned on diametrically opposed sides of said axis, as taught by Ringlien, so that the outputs of the respective source sensor modules can be compared in real time for determining characteristics of the container as a combined function of the output signals (Ringlien, Col 4, lines 37-54).

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhatia et al., Kulig, and Baldwin as applied to claims 1-5, 18, 20-22, 25-28, 30, 33, 35-38 above, and further in view of Nonaka et al. (U. S. Patent No. 5,195,026).

Bhatia et al., Kulig, and Baldwin disclose the apparatus and method as described above in paragraph 3.

Bhatia et al., Kulig, and Baldwin do not disclose the apparatus and method wherein said iterative search method is a golden search method.

Nonaka et al. discloses an information processor wherein said information processor uses a least squares fitting technique (Table 1); wherein the information processor uses an iterative search method, wherein said iterative search method is a golden section search (Table 1); and wherein said information processor uses a selection process involving min/max data points to improve the efficiency of the least squares fitting technique (Table 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus and method of Bhatia et al., Kulig, and Baldwin, to include specifically the iterative search of golden section search, as taught by Nonaka et al., in order to improve the accuracy of the data and in order to improve the efficiency of the program (Nonaka et al., Col 3, lines 2-12 and Table 1).

Response to Arguments

6. Applicant's arguments with respect to claims 1-6, 18, 20-22, 25-30, 33, 35-38 have been considered but are moot in view of the new ground(s) of rejection.

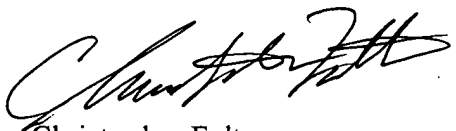
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy R. Cohen whose telephone number is (571) 272-2238. The examiner can normally be reached on 8 am - 5 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARC
April 18, 2005



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